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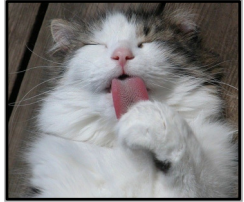
## Approach to the Pruritic Cat

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## Outline

- Introduction
- Reaction patterns
- Diagnostic approach
- Rule out parasites and FAD
- Evaluate for dermatophytosis
- Rule out food allergy
- Feline atopic syndrome

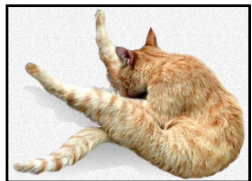


## Cats Are Not Small Dogs

- Licking vs. scratching
- Fastidious, secret groomers
- Regional localization of pruritus not as prominent
- Chronic changes (lichenification, hyperpigmentation) and otitis less common
- Secondary infections less common
- Same disease may have different clinical presentations

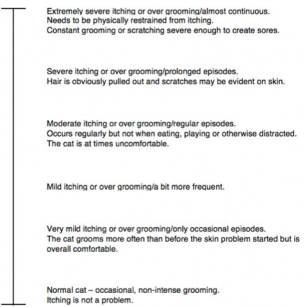
## The Pruritic Cat

- Clinical Manifestations
  - Licking
  - Biting or chewing (“barbering”)
  - Scratching
- Clinical Signs
  - Erythema
  - Alopecia
  - Excoriation
  - Presence of hair in feces or vomit



### How Itchy is your cat?

This scale is designed to measure the severity of itching in cats. Itching can include over grooming (licking, chewing, nibbling), scratching or rubbing. Read all the descriptions below starting at the bottom. Then use a marker pen to place a mark anywhere on the vertical line that runs down the left hand side to indicate the point at which you think your cat's level of itchiness lies.



Extremely severe itching or over grooming/almost continuous. Needs to be physically restrained from itching. Constant grooming or scratching severe enough to create sores.

Severe itching or over grooming/prolonged episodes. Hair is obviously pulled out and scratches may be evident on skin.

Moderate itching or over grooming/regular episodes. Occurs regularly but not when eating, playing or otherwise distracted. The cat is at times uncomfortable.

Mild itching or over grooming/a bit more frequent.

Very mild itching or over grooming/only occasional episodes. The cat grooms more often than before the skin problem started but is overall comfortable.

Normal cat – occasional, non-intense grooming. Itching is not a problem.

## Cutaneous Reaction Patterns

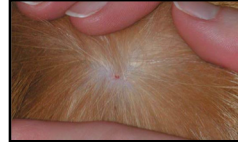
- Not a diagnosis, but a group of cutaneous reactive lesions to antigenic stimuli
  - Miliary dermatitis
  - Cervicofacial (face and neck) pruritus
  - Eosinophilic dermatoses
    - Eosinophilic granuloma complex
  - Self-induced (often symmetrical) alopecia
- Allergies are most common cause
  - Patterns NOT specific for any allergen group
- Other differentials

## Miliary Dermatitis

- Multifactorial, variably pruritic papulocrustous reaction pattern
- “Miliary” from *milium*, Latin for millet
- Dorsal or ventral trunk or pericervically



## Miliary Dermatitis



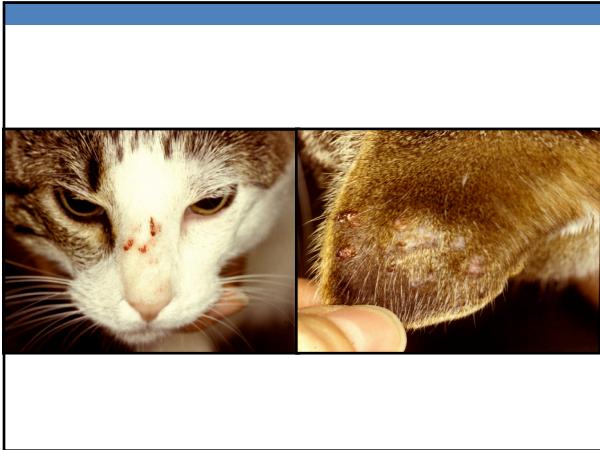
## Miliary Dermatitis

- Differential diagnoses
  - Allergy (common) including mosquito bite hypersensitivity
  - Ectoparasites
    - *Cheyletiella*, *Demodex*, *Otodectes*, *Notoedres*
  - Infectious
    - Dermatophytosis
  - Immune-mediated
    - Pemphigus foliaceus, cutaneous drug reaction
  - Neoplasia
    - Epitheliotropic lymphoma, mast cell tumors

## Mosquito-bite Hypersensitivity (MBH)

- Variably pruritic
- Early lesions (within 48 hrs): wheal → papule → ulcer and crust
- Late lesions: nodules, depigmentation, alopecia
- Sparsely haired areas affected: nasal planum, convex pinnae > foot pads, eyelids, skin around teats
- Footpads may be swollen with fissures and scale
- Type 1 hypersensitivity
- Outdoor cats predisposed

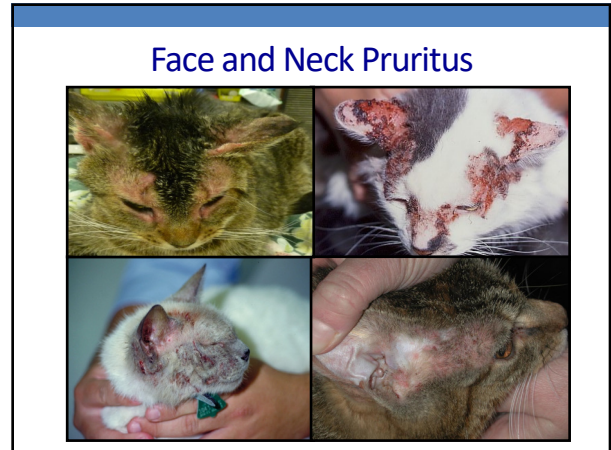




## Cervicofacial Pruritus

- Excoriation, erosion and ulceration as a result of intense pruritus directed at face and neck region





### Face and Neck Pruritus

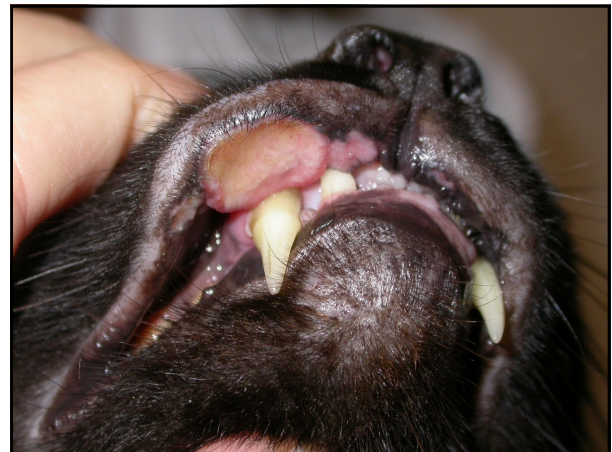
- Differential diagnoses
  - Adverse reaction to food >> FAD, atopy > mosquito bite hypersensitivity
  - Ectoparasites
    - *Notoedres*, *Otodectes*, *Demodex*, *Cheyletiella*,
  - Infectious
    - Dermatophytosis, pyoderma, viral dermatoses
  - Trauma, thermal or chemical burn
  - Immune-mediated
    - Pemphigus foliaceus, cutaneous drug reaction
  - Neoplasia
    - Epitheliotropic lymphoma, mast cell tumors

### Eosinophilic Dermatoses

- Eosinophilic granuloma complex
  - Indolent (rodent) ulcer
  - Eosinophilic plaque
  - Eosinophilic granuloma
- 20-25% of all allergic cats have one or more EGC lesions
- Genetic background may predispose
- Some cases considered foreign body reaction to mite or insect parts

### Indolent Ulcer

- Occur most commonly as a non-pruritic unilateral or bilateral well circumscribed ulcer with a elevated margin on the upper lip
- May occur with oral ulcers, eosinophilic plaques or granulomas in other areas of the oral cavity or body
- May extend to and involve hard palate
- Peripheral eosinophilia is rare





**Eosinophilic Plaque**

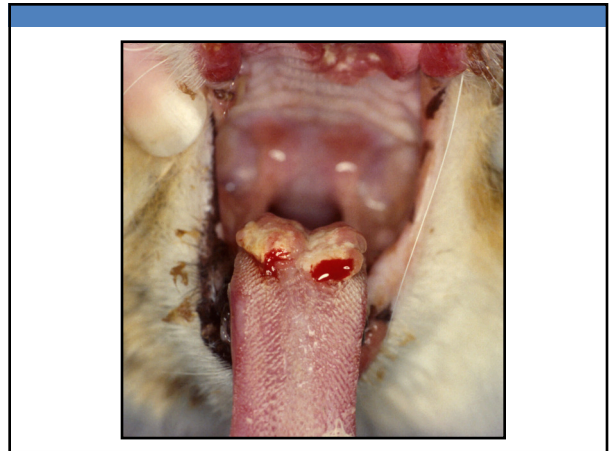
- Common
- Siamese breed over-represented
- Single or multiple well circumscribed, raised, round, erythematous, often moist and eroded, intensely pruritic lesions
- Abdomen, inguinal region, medial thighs > neck, mucocutaneous junctions
- Peripheral lymphadenopathy
- Tissue and blood eosinophilia usually present





## Eosinophilic Granuloma

- Linear or collagenolytic granuloma
- Yellow to pink, raised, well circumscribed lesions with linear, papular or nodular appearance
- Classic lesion is linear band on caudal thigh; may also occur on tongue and in oral cavity, face, feet, abdomen, and chin ("pouting cat")
- Juvenile form may spontaneously regress in 6-12 month old cats
- Often asymptomatic, although may be very pruritic
- Peripheral eosinophilia variable



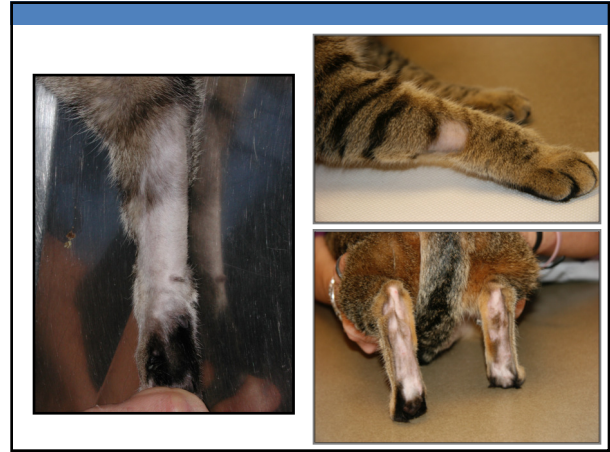
## Eosinophilic Dermatoses

- Differential diagnoses
  - Allergic disease
  - Ectoparasites
    - *Notoedres*, *Cheyletiella*, *Demodex*, *Otodectes*
  - Infectious
    - Dermatophytosis, pyoderma, viral dermatoses
  - Immune-mediated
    - Pemphigus foliaceus, cutaneous drug reaction
  - Neoplasia
    - Epitheliotropic lymphoma, mast cell tumors, SCC

## Self-Induced Alopecia

- Characterized by partial to complete often symmetrical alopecia usually with no secondary lesions
- Mild erythema or crusted papules may be present
- Most common on the ventral abdomen and limbs
- Lumbosacral region may be affected where fleas are endemic





### Self-Induced Alopecia

- Differential diagnoses
  - Flea allergy dermatitis (if dorsal) > adverse reaction to food, atopy
  - Dermatophytosis
  - Ectoparasitism
    - *Demodex gatoi*, *D. cati*, *Otodectes*, *Cheyletiella*, *Notoedres*
  - True psychogenic alopecia is rare - rule out all medical etiologies first!

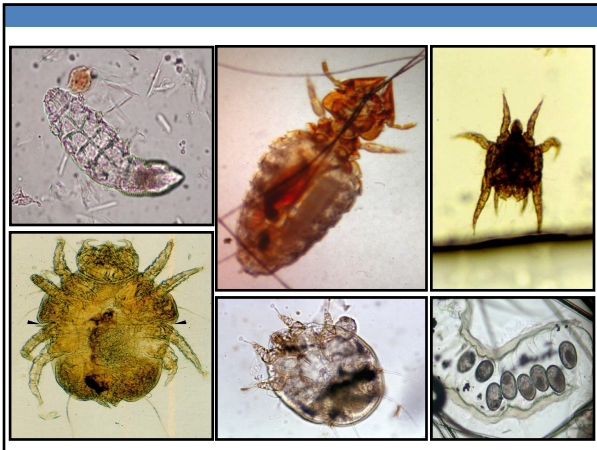
### Diagnostic Approach

- None of the reaction patterns are pathognomonic for a specific disease
- Important to rule out other differentials
- Diagnosis of feline atopic syndrome
  - Clinical signs
  - Made after ruling out other differentials
- Psychogenic alopecia is rare!

### Diagnostic Approach

- Cytology
- Evaluate for parasites
  - Flea combing
  - Skin scrapings
  - Ear swabs
  - Acetate tape preparation
- Rule out flea allergy dermatitis
- Evaluate for dermatophytosis
- Manage secondary infections
- Limit self trauma and relieve pruritus

### Cytology



### Flea Allergy Dermatitis (FAD)

- Most common allergic dermatoses
- Will not always see evidence of fleas
- Not like dogs – not just caudal rump
- Reaction Patterns
  - Often miliary dermatitis and self-induced alopecia
  - Often lumbosacral area and caudomedial thighs
  - Indolent ulcers

### Flea Allergy Dermatitis

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### Flea Allergy Dermatitis

## Products

### • Traditional

- Imidacloprid (Advantage®, Advantage II®, Advantage Multi® Bayer)
- Fipronil (Frontline® and Frontline plus® Merial),
- Selamectin (Revolution® Zoetis)
- Nitenpyram (Capstar® Elanco)



## Newer Products

- Indoxacarb (Activyl® Merck)
- Dinotefuran (Vectra® Ceva)
- Spinosad (Comfortis® Elanco)
- Spinetoram (Cheristin™ for cats Elanco)
- Fluralaner (Bravecto® Topical Merck)



## Flea Allergy Dermatitis

- Important to treat all pets in the house
- Other important factors
  - Feral cats or wildlife in the backyard?
- Flea dips/baths obsolete



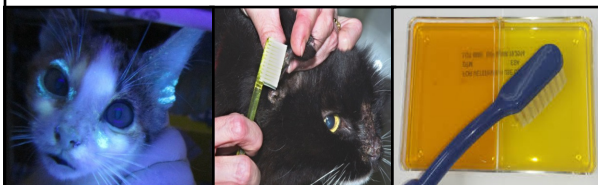
## Flea Allergy Dermatitis

- After flea control trial (4-6 weeks)
  - Good response (>80%) → consistent with FAD
  - Moderate response (30-80%) → continue trial
  - No further response → concurrent disease
- Poor response (<30%) → FAD unlikely



## Diagnostic Approach Evaluate for Dermatophytes

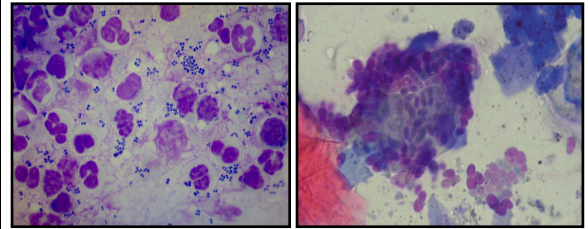
- May be pruritic
- Wood's lamp, trichogram and fungal (DTM) culture



## Manage Secondary Infections

- Infections may complicate each of the reaction patterns and aggravate pruritus
  - *Staph pseudintermedius* or *aureus*
  - *Malassezia pachydermatis*
- Otitis may be present with *Otodectes*, food allergy and feline atopic syndrome
- Perform cytology +/- culture

## Manage Secondary Infections



Pyoderma

Malassezia dermatitis

## Veterinary Dermatology

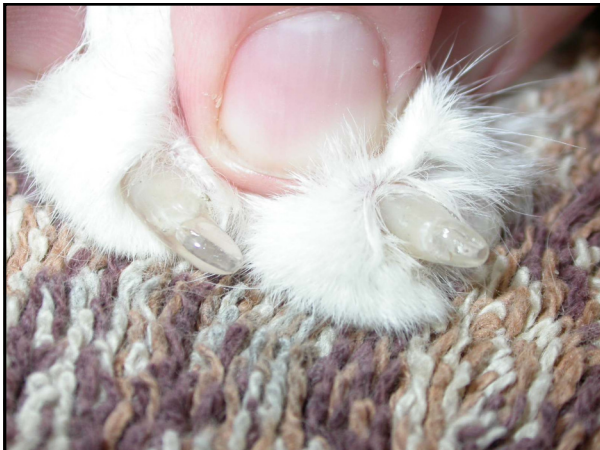
DOI: 10.1111/j.1365-3164.2011.01020.x

### Response of feline eosinophilic plaques and lip ulcers to amoxicillin trihydrate–clavulanate potassium therapy: a randomized, double-blind placebo-controlled prospective study

- 16 cats with eosinophilic plaques and/or lip ulcers
- All lesions shown to be infected with bacteria
- Treated with Amox-clavulanate (Clavamox®, Zoetis) as monotherapy
- Eosinophilic plaque group: 96.2 % reduction
- Lip ulcer group: 42.6% reduction
- Conclusions: Clavamox® effective monotherapy for eosinophilic plaques
- **Most effective therapy is management of cat's underlying condition while simultaneously addressing bacterial infection**

## Diagnostic Approach – Next Steps

- Allow two weeks of antimicrobial therapy (if possible) before initiating symptomatic therapy (i.e. glucocorticoids or cyclosporine)
- Consider use of soft paws, body suit or E collar to limit self trauma
- Re-examination in 3-4 weeks
- Based on response to treatment, consider food elimination dietary trial



## Manage Pruritus

- Antihistamines
  - Recommend 7-21 trial period
  - Side effects uncommon but include: vomiting, diarrhea, lethargy, behavioral change, hyperexcitability, increased thirst
- Cetirizine
  - 5 mg/cat PO q 12-24 hours - may inhibit eosinophilic migration and be useful for granulomas and plaques
- Chlorpheniramine
  - 2-4 mg/cat PO q 12-24 hours

## Glucocorticoids

- Rapid onset and often effective
- Avoid long acting injections if possible → increased side effects
- Use prednisolone vs. prednisone
- Ganz et al 2012
  - Oral methylprednisolone vs. oral triamcinolone
  - Both efficacious and well tolerated
- Taper to lowest effective every other day (or less) dose



## Cyclosporine

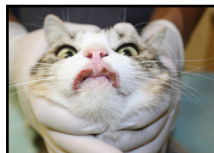
- Dosing
  - Slow in onset (2-4 weeks)
  - 7 mg/kg/day PO with food
  - Use licensed feline liquid formulation available, canine capsules or modified generic
- When pruritus controlled decreased to lowest effective dose
- Minor side effects (primarily gastrointestinal)
- Fatal toxoplasmosis has been reported in cats
  - Exposure of seronegative cats should be avoided
  - Keep indoors to prevent hunting and scavenging
  - Feed only commercial processed or cooked food

## Diagnostic Approach

- Evaluate for food allergies
  - Perform strict food elimination dietary trial with hydrolyzed or novel protein diet for 8-10 weeks
  - If no improvement and other causes of pruritus have been ruled out → feline atopic syndrome
    - Consider immunotherapy based on intradermal skin test and/or blood allergy serology

## Rule Out Food Allergies

- Reaction patterns
  - Miliary dermatitis: 20%
  - Self induced alopecia: 43%
  - Head/neck pruritus: 64%
  - Eosinophilic dermatitis: 25%
  - Multiple patterns: 46%



Hobi S et al. Clinical characteristics and causes of pruritus in cats: a multicentre study on feline hypersensitivity-associated dermatoses. *Vet Dermatol* 2011;22:406-413

## Diagnostic Criteria

1. 2 body sites affected
2. 2/4 reaction patterns
3. Lesions on the lips
4. Symmetrical alopecia
5. Erosions or ulcerations on chin or neck
6. Absence of lesions on the rump
7. Absence of nonsymmetrical alopecia on rump and tail
8. Absence of tumors or nodules

When 5/8 satisfied = high probability of feline atopic syndrome

Favrot et al. Establishment of diagnostic criteria for feline nonflea-induced hypersensitivity dermatitis. *Vet Dermatol* 2012.

## Key Points

- Four cutaneous reaction patterns
  - Not pathognomonic for specific disease
- Evaluate and treat for parasites and flea allergy dermatitis
- Manage secondary infections
- Screen for dermatophytosis if indicated
- Control pruritus and self trauma
- Rule out adverse reaction to food
- Consider criteria established to diagnose feline atopic syndrome

## Case 6 – “Sophie”

- 8 year old FS DSH
- Six month history of intensely pruritic well circumscribed, erythematous, erosive plaque on ventral abdomen
- History of well controlled diabetes mellitus



## What Are Your Differentials?

- Eosinophilic plaque
- Bacterial or fungal infection/granuloma
- Neoplasia



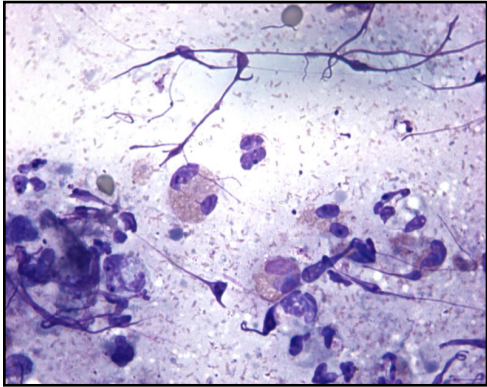
## What Diagnostics Do You Perform?

- Flea combing
- Impression smear cytology
- Skin punch biopsy with dermatopathology +/- deep tissue culture



## Results

- Flea combing: negative
- Skin cytology: moderate neutrophils (often degenerate) with mild intracellular and extracellular cocci bacteria; 5-7 eosinophils/oif
- Dermatopathology: hyperplastic, superficial and deep perivascular to diffuse eosinophilic dermatitis



## What Is Your Diagnosis?

Eosinophilic Plaque  
with Secondary Superficial  
Pyoderma

## Treatment

- Revolution® (selamectin) spot-on every 4 weeks
- Convenia® (cefovecin) at 8 mg/kg subcutaneously every 2 weeks x 2 treatments → resulted in near resolution of lesion, but only mild reduction in pruritus
- Feline Atopica® (cyclosporine) at 7 mg/kg PO every 24 hrs
- Food elimination dietary with Royal Canin® hydrolyzed protein for 8-10 weeks

## Follow Up

- Atopica® discontinued after six weeks to determine if sustained improvement on food trial alone → pruritus returned
- Intradermal skin and blood allergy testing performed with subcutaneous immunotherapy (IT) initiated
- Managed on IT alone with no pruritus or recurrence of lesion

